



## Chapter 3 – Intermediate Operations

### Lesson D | Pivot, Unpivot, and Valuestocols | 10 Minutes

#### Lesson Goals

In this Lesson, you will:

- Learn the Pivot transform to transpose rows to columns
- Learn the Unpivot transform to transpose columns to rows
- Learn the Valuestocols transform to create new calculated fields for each category in a column

#### Lesson Instructions

**YOUR GOAL:** Pivot, unpivot, and valuestocols the ItemType column

1.

#### Pivot ItemType

We have a column, ItemType, that contains three different values: Prepared Food, Plants/Flowers, and Crafts.

We want to pivot these values so that each value is its own column. This will allow us to see which items were purchased at the same time.

When you **Pivot** data, the unique values you selected from the column or columns become new columns of the dataset, each of which contain a summary calculation that you specify.

Locate the ItemType column in the WI Markets dataset. Click on the column menu drop down to the right of the header, hover over **Restructure**, then click on **Pivot**.

The output we are looking for is the sum of the quantity of goods purchased for each ItemType, grouped by the Timestamp.

To accomplish this, we want our function to be the sum of the quantity column, and we want

```
pivot col: ItemType value:  
sum(Quantity) group: TimeStamp
```



	<p>our group by parameter to be the time stamp.</p> <p><b>Add</b> this step to your recipe</p>	
2.	<p><b>Unpivot the Three Pivoted Columns</b></p> <p>Now we want to unpivot the columns we just pivoted.</p> <div><p>The <b>Unpivot</b> transform reshapes the data by merging one or more columns into key and value columns. Keys are the names of the input columns, and value columns are the cell values from the source columns. Rows of data are duplicated, once for each input column.</p><p><b>Note:</b> it is not advisable to use many unpivot transforms as this will cause the number of rows to proliferate and the size of the dataset to increase dramatically</p></div> <p>Go to the <b>Columns</b> view, and ctrl + click (command on mac) on sum_Quantity_Crafts, sum_Quantity_Plants_Flowers, sum_Quantity_Prepared_Food. Next, click <b>Action, Restructure</b>, then finally select <b>Unpivot</b>.</p> <p>You'll see in the preview the resulting two columns will contain the three column headers for the columns we are unpivoting in the key column, and their corresponding values in the value column.</p>	<pre>unpivot col: sum_Quantity_Crafts,sum_Quantit y_Plants_Flowers,sum_Quantity_P repared_Food</pre>



3.	<p><b>Valuestocols</b></p> <p>Delete the Pivot and Unpivot steps. This time, we are going to create three columns from the ItemType column that are a calculation of the total sale.</p> <div><p>For each unique value in a column, <b>Valuestocols</b> creates a separate column which contains the value in the source column, or an indicator value is inserted into the new column.</p></div> <p>Click on the column header for the ItemType column. Find the suggestion that says to convert values to columns. Click <b>Edit</b>, and in the <b>Formula if present</b> parameter multiply Price and Quantity. Notice that the output is the total sales price for that item and timestamp.</p> <p>Do not Add this step to your recipe, it was merely for demonstration purposes.</p>	<pre>valuestocols table: MISSING col: ItemType value: Quantity * price default: 0</pre>
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